UNITED STATES PATENT AND TRADEMARK OFFICE

u.

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,748	01/28/2005	Nobuhiko Funato	1152-0316PUS1	9305

2292 7590 02/22/2008		EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747		ELPENORD, CANDAL	

ART UNIT	PAPER NUMBER
2616	

NOTIFICATION DATE	DELIVERY MODE
02/22/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

	Application No.	Applicant(s)
Office Action Summary	10/522,748	FUNATO, NOBUHIKO
	Examiner	Art Unit
	Candal Elpenord	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
   Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *28 January 2005*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-45* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-45* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *28 January 2005* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date *28 January 2005, 12 April 2006*.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 44-45 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 44, the limitation a program for making a data communication apparatus execute" recited in line 1 is not a process, machine, manufacturer, or composition of matter, or any new and useful improvement thereof because there is no physical structure/connection of computer software recited in the claim. To overcome this rejection, it is suggested to applicant to change "a program" to -a computer readable medium encoded with computer executable instructions--. Similar problem exists in claim 45, line 1.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   **Claims 1, 6, 9-10, 44-45** are rejected under 35 U.S.C. 102(e) as being anticipated by Goldhor et al (US 6,625,656 B2).

Regarding claim 1, Goldhor et al. discloses an intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines14-20, "intermittently arriving data", recited in col. 22, lines 30-37) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15), comprising: a reception step ("capture buffer receiving data as input", recited in col. 3, lines 6-15) for storing data received intermittently into a buffer memory (fig. 2, Capture Buffer 400 as FIFO for memory store, recited in col. 3, lines 8-21, lines 35-38); a playback step (fig. 2, Playback System 500, recited in col. 3, lines 35-43) for playing the stored data ("playback associated with buffer", recited in col. 6, lines 4-19) in the buffer memory (fig. 2, Capture Buffer 400 as FIFO for memory store, recited in col. 3, lines 8-21, in parallel with the reception step ("capture buffer receiving data as input", recited in col. 3, lines 6-15); and a first setup step for setting up (fig. 2, Transmission Rate Determiner 700 with the Capture Buffer Monitor 600, "determine the departure and arrival rate from the Capture Buffer 400, recited in col. 4, lines 34-51, see, fig. 7; System Clock 5300, recited in col. 13, lines 4-8) a first transmission schedule ("balance of data with data arrival", recited in col. 5, lines 28-46) which will not cause either overflow or underflow ("avoid overflow in the Capture Buffer 400", recited in col. 9, lines 35-44) of data in the buffer memory ("rate restricted by data arrival when a user request would cause underflow or overflow in the capture buffer 400", recited in col. 5, lines 28-46), based on a data characteristic of the data ("audio and audio-visual work received

for sources", recited in col. 2, lines 35-42, "frame per unit time", recited in col. 9, lines

49-55).

Regarding claim 6, Goldhor et al. discloses the intermittent communication

method ("method and apparatus for providing continuous playback of media and audio

and audio-visual works received", recited in col. 2, lines 14-20, "intermittently arriving

data", recited in col. 22, lines 30-37) for data communication apparatus (fig. 2,

Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15),

wherein the first transmission schedule ("determines of playback rate over time interval",

recited in col. 6, lines 58-65) includes a data transmission rate (fig. 7, TSM Rate

Determiner 700, "produces of a rate signal", recited in col. 5, lines 23-27).

Regarding claim 9, Goldhor et al. discloses the intermittent communication

method ("method and apparatus for providing continuous playback of media and audio

and audio-visual works received", recited in col. 2, lines 14-20) for data communication

apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 –

col. 3, lines 15) according to claim 6, wherein the data transmission rate is set at the

maximum (see, "the maximum sustainable playback rate as a function of the arrival

rate", recited in col. 6, lines 62 – col. 7, lines 42).

Regarding claim 10, the intermittent communication method ("method and

apparatus for providing continuous playback of media and audio and audio-visual works

received", recited in col. 2, lines 14-20) for data communication apparatus (fig. 2,

Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15)

according to claim 6, wherein the data transmission rate is set at the minimum (see, "the

minimum sustainable playback rate as a function of the arrival rate", recited in col. 7,

lines 51 – col. 8, lines 41).

Regarding claim 44, Goldhor et al. discloses a program ("modules embodied as

software programs", recited in col. 10, lines 37-49) for making a data communication

apparatus execute the intermittent communication method ("method and apparatus for

providing continuous playback of media and audio and audio-visual works received",

recited in col. 2, lines 14-20).

Regarding claim 45, Goldhor et al. discloses a recording medium (fig. 2,

Capture Buffer 400, "digital storage device such as CD-ROM, magnetic disc", recited in

col. 4, lines 10-19) on which the program ("modules embodied as software programs",

recited in col. 10, lines 37-49) according to claim 44 is recorded.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

6.   **Claims 2- 8, 11-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldhor et al (US 6,625,656 B2) in view of Asar et al (US 7,197,557 B1) in further view of Sen et al (US 6,691,312 B1).

Regarding claim 2, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines14-20, "intermittently arriving data", recited in col. 22, lines 30-37) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15).

Regarding claim 3, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines14-20, "intermittently arriving data", recited in col. 22, lines 30-37) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15).

Regarding claim 4, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20, "intermittently arriving data", recited in col. 22, lines 30-37) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15).

Regarding **claim 5**, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20, "intermittently arriving data", recited in col. 22, lines 30-37) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15).

Regarding **claim 7**, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20, "intermittently arriving data", recited in col. 22, lines 30-37) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15), wherein the first transmission schedule ("data transfer rate", recited in col. 3, lines 17-21) includes an amount of buffering of data ("sufficient amount of data in the Capture Buffer", recited in col. 3, lines 23-31) to be stored in advance in the buffer memory (fig. 1, Capture Buffer 400) from a start of data transmission from a transmitter (fig. 1, Streaming Data Source 100) to a beginning of playback (fig. 1, Playback System 800) on a receiver (fig. 1, User System 300).

Regarding **claim 8**, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20, "intermittently arriving data", recited in col. 22, lines 30-37) for data communication apparatus (fig. 2,

Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15)

according to claim 7, wherein the amount of buffering is set at the maximum ("the high

threshold parameter value relating to the amount of data in the buffer", recited in col. 5,

lines 1-8).

Regarding claim 11, Goldhor et al. discloses the intermittent communication

method ("method and apparatus for providing continuous playback of media and audio

and audio-visual works received", recited in col. 2, lines 14-20) for data communication

apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 –

col. 3, lines 15) according to claim 1, wherein the first transmission schedule includes

intermittent communication information that represents the amount of data transmission

(TSM Rate Determiner 700, "determines a TSM rate for each segment in the capture

buffer", recited in col. 6, lines 39-48) in one intermittent period (fig. 7, Data Departure

Time Stamp Apparatus 5500, recited in col. 11, lines 36- 56).

Regarding claim 12, Goldhor et al. discloses the intermittent communication

method ("method and apparatus for providing continuous playback of media and audio

and audio-visual works received", recited in col. 2, lines 14-20)   for data communication

apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 –

col. 3, lines 15) according to claim 11, wherein the intermittent communication

information includes the time of transmission in each intermittent communication period

(fig. 7, Data Departure Time Stamp Apparatus 5500, recited in col. 11, lines 36- 56).

Regarding claim 13, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15) according to claim 11, wherein the intermittent communication information includes the amount of data ("portion of the media data", recited in col. 36-56) transmission in each intermittent communication period (fig. 7, Data Departure Time Stamp Apparatus 5500, recited in col. 11, lines 36- 56)

Regarding claim 14, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15) according to claim 11, wherein the intermittent communication information includes a data transmission rate ("data delivery rate of information from the source", recited in col. 5, lines 33-41) in each intermittent communication period (fig. 7, Data Departure Time Stamp Apparatus 5500, recited in col. 11, lines 36- 56).

Regarding claim 15, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15).

Regarding claim 16, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15).

Regarding claim 17, Goldhor et al. discloses the intermittent communication method("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15).

Regarding claim 18, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15) according to claim 16, wherein a receiver (fig. 2, Capture Buffer 400 of the User System 300, recited in col. 3, lines 8-15) of the data implements the reception step, the playback step (fig. 2, Playback System 500) , the first setup step, the comparison step and the proposal step ("altering the data consumption rate using changes in the play rate", recited in col. 28-36).

Regarding claim 19, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15) according to claim 16, wherein a transmitter of the data (FIG. 1, Streaming Data Source 100, recited in col. 3, lines 4-8) implements the first setup step while a receiver of the data implements the reception step (fig. 1, Capture Buffer 400), the playback step (fig. 1, Playback System 500), the comparison step and the proposal step ("altering the data consumption rate using changes in the play rate", recited in col. 28-36).

Regarding claim 20, Goldhor et al. discloses the intermittent communication method for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15) according to claim 16, wherein a transmitter (fig. 1, Streaming Data Source 100) of the data implements the first setup step, the comparison step and the proposal step ("altering the data consumption rate using changes in the play rate", recited in col. 28-36) while a receiver (fig. 1, User System 300) of the data implements data reception step (fig. 1, Capture Buffer 400) and the playback step (fig. 1, Playback System 800).

Regarding claim 21, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 –

col. 3, lines 15) according to claim 17, wherein the data is transmitted (see, fig. 2, Streaming Data Source 100, "providing media data to User System 300", recited in col. 3, lines 1-12) from a single transmitter (fig. 2, Streaming Data Source 100, recited in col. 2, lines 66 – col. 3, lines 8) to first and second receivers (fig. 2, User System 300, recited in col. 3, lines 1-8), and the modification step ("Time-Scale Modification so that a data drain rate is matched with streaming data rate", recited in col. 3, lines 48-63) is implemented between the transmitter (fig. 2, Streaming Data Source 100, recited in col. 2, lines 66 – col. 3, lines 8) and the first receiver (fig. 2, User System 300, recited in col. 3, lines 1-8), and between the transmitter (fig. 2, Streaming Data Source 100, recited in col. 2, lines 66 – col. 3, lines 8) and the second receiver (fig. 2, User System 300, recited in col. 3, lines 1-8).

Regarding claim 22, Goldhor et al. discloses the intermittent communication method ("method and apparatus for providing continuous playback of media and audio and audio-visual works received", recited in col. 2, lines 14-20) for data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15), wherein the first setup step, the comparison step and the proposal step are executed in a data link layer in terms of an OSI layer model ("balance of a data consumption rate with the arrival rate when a user request would cause underflow or overflow", recited in col. 5, lines 29-46).

Goldhor et al. discloses all the claimed limitation with the exception of being silent with regard to the following features: **regarding claim 2**, wherein the data characteristic ("frame characteristics", recited in col. 8, lines 52-62) includes an elapsed

time (fig. 8, "playback elapsed time") after a start of data playback data (fig. 8, "the

playback elapsed time", recited in col. 7, lines 32-40) and a necessary total amount of

data up to the elapsed time ("audio bandwidth", recited in col. 7, lines 41-48); **regarding**

claim 3, wherein the data characteristic ("frame characteristics", recited in col. 8, lines

52-62) is information that can lead a necessary total amount of data up to an elapsed

time after a start of data playback (fig. 8, "the playback elapsed time", recited in col. 7,

lines 32-40); **regarding claim 4**, wherein the data characteristic ("frame

characteristics", recited in col. 8, lines 52-62) includes a total amount of data ("audio

bandwidth", recited in col. 7, lines 41-48) that will have been used by the elapsed time

(fig. 8, "the playback elapsed time", recited in col. 7, lines 32-40); **regarding claim 5**,

wherein the data characteristic ("frame characteristics", recited in col. 8, lines 52-62) is

information that can lead a total amount of data that will have been used by the elapsed

time (fig. 8, "the playback elapsed time", recited in col. 7, lines 32-40); **regarding claim**

15, wherein the transmission schedule (fig. 1, Scheduler 104, recited in col. 5, lines 16-

28) includes a start time ("starting minute", recited in col. 5, lines 16-28) of a new

intermittent communication ("schedule tasks based on specific time", recited in col. 16,

lines 16-31). Therefore, it would have been obvious to one of ordinary skill in the art at

the time the invention was made to modify the features of Goldhor et al. by using

features as taught by Asar et al in order to provide measurement performance of

streaming media (See Col. 1, lines 57- col. 2, lines 8 for motivation).

Goldhor et al. and Asar et al. discloses all the claimed limitation with the

exception of being silent with regard to the following features: **regarding claim 16**, a

comparison step for comparing the first transmission schedule with a current

transmission schedule of the data being communicated; and a proposal step for

transmitting the first transmission schedule to a communication partner side when the

first transmission schedule is different from the current transmission schedule;

regarding claim 17, wherein the communication partner side includes: a second setup

step for setting up a second transmission schedule which will not cause either overflow

or underflow of data in the buffer memory, based on the data characteristic; and a

modification step for modifying the current transmission schedule into the first or second

transmission schedule if the first and second schedules are identical.

However, Sen et al. in the same field of endeavor discloses those claimed

features: **regarding claim 16**, a comparison step for comparing the first transmission

schedule with a current transmission schedule ("difference in transmission schedule",

recited in col. 4, lines 56-67) of the data being communicated; and a proposal step for

transmitting the first transmission schedule ("distributing the determined transmission

schedule", recited in col. 2, lines 19-29) to a communication partner side (fig. 1, Internal

Nodes 104, recited in col. 3, lines 49-60) when the first transmission schedule is

different from the current transmission schedule ("the buffers at the internal nodes allow

each other to accommodate the difference between the transmission schedules",

recited in col. 4, lines 56-67); **regarding claim 17**, wherein the communication partner

side (fig. 1, Internal Nodes 104, recited in col. 3, lines 49-60) includes: a second setup

step for setting up a second transmission schedule which will not cause either overflow

or underflow of data in the buffer memory ("computing of transmission schedules to

avoid underflow or overflow at the client buffer", recited in col. 8, lines 19-40) based on

the data characteristic ("frame sizes of video", recited in col. 13, recited in col. 6-15);

and a modification step for modifying the current transmission schedule into the first or

second transmission schedule if the first and second schedules are identical (see,

accommodate the difference in transmission schedule", recited in col. 4, lines 56-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the features of Goldhor et al. with Asar et al. by using

features as taught Sen et al. in order to provide multicasting of video streaming based

on accessed information (See Col. 1, lines 55 - col. 2, lines 12 for motivation).

7.   **Claims 23- 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Goldhor et al (US 6,625,656 B2) in view of Okada et al. (US 5,838.668).

Regarding claim 23, Goldhor et al. discloses a data communication apparatus

(fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines

15) for receiving data (fig. 2, User System 300, recited in col. 3, lines 4-12) transmitted

intermittently ("method and apparatus for providing continuous playback of media and

audio and audio-visual works received", recited in col. 2, lines14-20, "intermittently

arriving data", recited in col. 22, lines 30-37) from a transmitting side (fig. 2, Streaming

Data Source 100, recited in col. 3, lines 1-9), storing the data ("buffered input data at the

Capture Buffer 400", recited in col. 3, lines 35-43) into a buffer memory (fig. 2, Capture

Buffer 400, recited in col. 3, lines 8-16) and playing the data stored ("playback

associated with buffer", recited in col. 6, lines 4-19, fig. 2, Playback System 500, recited

in col. 3, lines 35-43) in the buffer memory (fig. 2, Capture Buffer 400, recited in col. 3, lines 8-16) in real time in parallel ("data transmission which corresponds to real-time playback", recited in col. 22, lines 9-14) with the data storing ("playback associated with buffer", recited in col. 6, lines 4-19, comprising: a multimedia data communication controller (fig. 2, fig. 7, Time Scale Modification 800 and Time Scale Modification Rate Determiner 700, for setting up a transmission schedule (fig. 7, Time Scale Comparator, "computes a control parameter", recited in col. 12, lines 15-25, System Clock 5300, recited in col. 11, lines 43-56) which will not cause either overflow or underflow ("time scale modification desired to avoid data overflow or data overflow", recited in col. 12, lines 44-49) during a real-time playback of the data ("data transmission which corresponds to real-time playback", recited in col. 22, lines 9-14), based on a data characteristic of the data ("stream of data representing portions of audio, audio-visual work", recited in col. 19, lines 7-15).

Regarding claim 24, Goldhor et al. discloses the data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15) according to claim 23, wherein the transmission schedule includes a time interval for alternation of intermittent communication ("time scale modification to slow down the playback rate of the audio visual work in to match a data drain rate of the streaming data rate", recited in col. 3, lines 35-48), or the amount of data transmission for alternation of intermittent communication ("streaming data rate", recited in col. 3, lines 35-48).

Goldhor et al. discloses all the claimed limitation with the exception of being

silent with regard to the following features: **regarding claim 23**, and a communicator for

transmitting the transmission schedule to the transmitting side.

However, Okada et al. in the same field of endeavor discloses those claimed

features: **regarding claim 23**, and a communicator (fig. 1, Host Station 6) for

transmitting the transmission ("transmitting broadcast schedule", recited in col. 3, lines

56-66) schedule to the transmitting side (fig. 1, Satellite Communications Node);

regarding claim 24, the transmission schedule (fig. 2, broadcast schedule transmission

means, recited in col. 4, lines 9-15). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify the features of

Goldhor et al. by using features as taught Okada et al. in order to provide transmission

of broadcast schedule to a transmitting terminal whereby that terminal uses the

schedule to transmit data to a plurality of receiving stations according the schedule (See

Col. 2, lines 17-39 for motivation).

8.   **Claims 25-28, 30-43** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Goldhor et al (US 6,625,656 B2) in view Asar et al (US 7,197,557) in further view

of Sen et al (US 6,691,312 B1).

Regarding claim 25, Goldhor et al. discloses a data communication apparatus

(fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines

15) for playing received data (fig. 2, Playback System 500, recited in col. 3, lines 35-43,

"playback associated with buffer", recited in col. 6, lines 4-19), comprising: an inter-node

communicator (fig. 11, Intermediate Server Node 250, recited in col. 18, lines 12-19) for

implementing transmission and reception of data with a communication partner

appliance (fig. 11, User System 317, recited in col. 18, lines 19-31); a buffer memory

for storing the data received (fig. 11, Capture Buffer 400, recited in col. 18, lines 32-44)

by the inter-node communicator (fig. 11, Intermediate Server Node 250, recited in col.

18, lines 12-19); a data player for playing the storage data (fig. 2, Playback System

500, recited in col. 3, lines 35-43, "playback associated with buffer", recited in col. 6,

lines 4-19), stored in the buffer memory (fig. 11, Capture Buffer 400, recited in col. 18,

lines 32-44) in parallel while the buffer memory is implementing a buffering process of

storing the data ("play rate associated with buffer", recited in col. 6, lines 4-15).

Regarding claim 26, Goldhor et al. discloses a data communication apparatus

(fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines

15), comprising: an inter-node communicator (fig. 11, Intermediate Server Node 250,

recited in col. 18, lines 12-19) for transmitting data to a communication partner

appliance (fig. 11, User System 317, recited in col. 18, lines 19-31);

Regarding claims 27-33, discloses the data communication apparatus (fig. 2,

Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15);

regarding claim 34, the data communication apparatus (fig. 2, Continuous Playback

Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15) according to claim 25 or

26, wherein the transmission schedule includes a data transmission rate ("arrival rates",

recited in col. 5, lines 28-33); **regarding claim 35,** the data communication apparatus

(fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15), wherein the first transmission schedule ("data transfer rate", recited in col. 3, lines 17-21) includes an amount of buffering of data ("sufficient amount of data in the Capture Buffer", recited in col. 3, lines 23-31) to be stored in advance in the buffer memory (fig. 1, Capture Buffer 400) from a start of data transmission from a transmitter (fig. 1, Streaming Data Source 100) to a beginning of playback (fig. 1, Playback System 800) on a receiver (fig. 1, User System 300).

Regarding claim 36, Goldhor et al. discloses the data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15) according to claim 35, wherein the amount of buffering is set at the maximum ("the high threshold parameter value relating to the amount of data in the buffer", recited in col. 5, lines 1-8).

Regarding claim 37, Goldhor et al. discloses the data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15) according to claim 34, wherein the data transmission rate is set at the maximum (see, "the maximum sustainable playback rate as a function of the arrival rate", recited in col. 6, lines 62 – col. 7, lines 42).

Regarding claim 38, Goldhor et al. discloses the data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15) according to claim 34, wherein the data transmission rate is set at the minimum (see, "the minimum sustainable playback rate as a function of the arrival rate", recited in col. 7, lines 51 – col. 8, lines 41).

Regarding claim 39, Goldhor et al. discloses data communication apparatus

(fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines

15), wherein the intermittent communication information ("method and apparatus for

providing continuous playback of media and audio and audio-visual works received",

recited in col. 2, lines 14-20) for data communication apparatus (fig. 2, Continuous

Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15), wherein the

intermittent communication information includes the amount of data ("portion of the

media data", recited in col. 36-56) transmission in each intermittent communication

period (fig. 7, Data Departure Time Stamp Apparatus 5500, recited in col. 11, lines 36-

56).

Regarding claim 40, Goldhor et al. discloses the data communication apparatus

(fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines

15), according to claim 39, wherein the intermittent communication information

("intermittently arriving data", recited in col. 22, lines 30-37) includes a time of

transmission in each intermittent communication period (fig. 7, Data Departure Time

Stamp Apparatus 5500, recited in col. 11, lines 36- 56).

Regarding claim 41, Goldhor et al. discloses the data communication apparatus

(fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines

15), according to claim 39, wherein the intermittent communication information

("intermittently arriving data", recited in col. 22, lines 30-37) includes an amount of data

("portion of the media data", recited in col. 36-56) transmission in each intermittent

communication period (fig. 7, Data Departure Time Stamp Apparatus 5500, recited in
col. 11, lines 36- 56).

Regarding claim 42, Goldhor et al. discloses the data communication apparatus
(fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines
15), wherein the intermittent communication information includes a data transmission
rate ("data delivery rate of information from the source", recited in col. 5, lines 33-41) in
each intermittent communication period (fig. 7, Data Departure Time Stamp Apparatus
5500, recited in col. 11, lines 36- 56).

Goldhor et al. discloses all the claimed limitation with the exception of being
silent with regard to the following features: **regarding claim 25**, a data quality manager
for storing quality management information of the received data to be played; the
quality management information; wherein the transmission schedule is set up based on
the quality management information; **regarding claim 26**, a data quality manager for
storing quality management information of the data; the quality management
information; wherein the transmission schedule is set up based on the quality
management information; **regarding claim 27**, a data quality reference portion for
transmitting the quality management information from the data quality manager to the
schedule judging portion, wherein the transmission schedule is set up by the schedule
judging portion; **regarding claim 28**, a data quality reference portion for acquiring the
quality management information from the data quality manager and setting up the
transmission schedule; **regarding claim 30**, wherein the quality management
information includes an elapsed time after a start of playback of the data and a

necessary total amount of data up to the elapsed time; **regarding claim 31**, wherein the

quality management information is information that can lead the necessary total amount

of data up to an elapsed time after a start of playback of the data; **regarding claim 32,**

wherein the quality management information includes a total amount of data that will

have been used by the elapsed time; **regarding claim 33**, wherein the quality

management information is information that can lead a total amount of data that will

have been used by the elapsed time.

However, Asar et al. in the same field of endeavor discloses the claimed

features: **regarding claim 25**, a data quality manager for storing quality management

information ("sending of performance measurements to storage device", recited 2, lines

9-16) the received data to be played (fig. 1, System for monitoring performance for

streaming and quality", recited in col. 3, lines 7-19); the quality management

information ("performance measurements", recited in col. 7, lines 41-48); wherein the

transmission schedule (fig. 1, Scheduler 104) is set up based on the quality

management information ("computes of schedule based on performance

measurement", recited in col. 5, lines 17-27); **regarding claim 26**, a data quality

manager for storing quality management information ("sending of performance

measurements to storage device", recited 2, lines 9-16) of the data (fig. 1, System for

monitoring performance for streaming and quality", recited in col. 3, lines 7-19); the

quality management information ("performance measurements", recited in col. 7, lines

41-48) wherein the transmission schedule (fig. 1, Scheduler 104) is set up based on the

quality management information ("computes of schedule based on performance

measurements", recited in col. 5, lines 17-27); **regarding claim 27**, a data quality

reference portion (fig. 6, Measurement Data 130, recited in col. 7, lines 2-20, fig. 9,

Streaming quality) for transmitting the quality management information (fig. 1, Data

Delivery System 98, "delivering performance", recited in col. 4, lines 46-59) from the

data quality manager (fig. 1, System for monitoring performance for streaming and

quality", recited in col. 3, lines 7-19) to the schedule judging portion (fig. 1, Scheduler

104, recited in col. 5, lines 17-34), wherein the transmission schedule ("the scheduler

configured to schedule based on measurement", recited in col. 5, lines 37-42) is set up

by the schedule judging portion (fig. 1, Scheduler 104, recited in col. 5, lines 17-34);

regarding claim 28, a data quality reference portion (fig. 6, Measurement Data 130,

recited in col. 7, lines 2-20) for acquiring the quality management information from the

data quality manager (fig. 1, System for monitoring performance for streaming and

quality", recited in col. 3, lines 7-19) and setting up the transmission schedule

("computes of schedule", recited in col. 5, lines 17-25); **regarding claim 30**, wherein the

quality management information (fig. 1, System for monitoring performance for

streaming and quality", recited in col. 3, lines 7-19) includes an elapsed time (fig. 8,

"playback elapsed time") after a start of playback of the data (fig. 8, "the playback

elapsed time", recited in col. 7, lines 32-40) and a necessary total amount of data up to

the elapsed time ("audio bandwidth", recited in col. 7, lines 41-48); **regarding claim 31**,

wherein the quality management information (fig. 8, "the playback elapsed time", recited

in col. 7, lines 32-40) is information that can lead the necessary total amount of data up

("audio bandwidth", recited in col. 7, lines 41-48) to an elapsed time after a start of

playback of the data (fig. 8, "the playback elapsed time", recited in col. 7, lines 32-40);

regarding claim 32, wherein the quality management information ("performance

measurements", recited in col. 7, lines 41-48) includes a total amount of data that will

have been used by the elapsed time (fig. 8, "playback elapsed time", "the number of

frames, average audio bandwidth", recited in col. 7, lines 41-48); **regarding claim 33**,

wherein the quality management information is information ("performance

measurements", recited in col. 7, lines 41-48) that can lead a total amount of data that

will have been used by the elapsed time ("audio bandwidth", recited in col. 7, lines 41-

48); **regarding claim 43**, wherein the transmission schedule (fig. 1, Scheduler 104,

recited in col. 5, lines 16-28) includes a start time ("starting minute", recited in col. 5,

lines 16-28) of a new intermittent communication ("schedule tasks based on specific

time", recited in col. 16, lines 16-31). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify the features of

Goldhor et al. by using features as taught by Asar et al. in order to provide

measurement performance of streaming media (See Col. 1, lines 57- col. 2, lines 8 for

motivation).

Goldhor et al. and Asar et al. disclose all the claimed limitation with the exception

of being silent with regard features: **regarding claim 25,** a schedule judging portion for

transmitting to the inter-node communicator a transmission schedule of the data,

according to which the buffer memory will not cause either overflow or underflow;

regarding claim 26, a schedule judging portion for transmitting to the inter-node

communicator a transmission schedule of the data, according to which a buffer memory

of the communication partner appliance will not cause either overflow or underflow.

However, Sen et al. in the same field of endeavor discloses the following

features: **regarding claim 25,** a schedule judging portion for transmitting to the inter-

node communicator a transmission schedule of the data ("transmission of schedule",

recited in col. 4, lines 55-67), according to which the buffer memory will not cause either

overflow or underflow ("feasible transmission of schedule to avoid buffer underflow and

overflow", recited in col. 8, lines 19-40), **regarding claim 26,** a schedule judging

portion for transmitting to the inter-node communicator a transmission schedule of the

data ("transmission of schedule", recited in col. 4, lines 55-67), according to which a

buffer memory of the communication partner appliance will not cause either overflow or

underflow ("feasible transmission of schedule to avoid buffer underflow and overflow at

the client buffer", recited in col. 8, lines 19-40), wherein the transmission schedule is set

up based on the quality management information ("feasible schedule sets so that

bandwidth constraints are satisfied", recited in col. 7, lines 55 - col. 8, lines 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the features of Goldhor et al. with Asar et al. by using

features as Sen et al. in order to provide multicasting of video streaming based on

accessed information (See Col. 1, lines 55 - col. 2, lines 12 for motivation).

9.   **Claim 29** is rejected under 35 U.S.C. 103(a) as being unpatentable over

Goldhor et al (US 6,625,656 B2) in view Asar et al (US 7,197,557), Sen et al (US

6,691,312 B1) as applied to claims 25/26 above, and further in view of Seki et al (US 5,678,229).

Regarding claim 29, Goldhor et al. discloses the data communication apparatus (fig. 2, Continuous Playback Apparatus 1000, recited ion col. 2, lines 66 – col. 3, lines 15).

Asar et al. discloses the transmission schedule (fig. 1, Schedule 104).

Goldhor et al. Asar et al. and Sen et al. disclose all the claimed limitation with the exception of being silent with respect to the following features: an electric power supply controller for stopping electric power supply to the inter-node communicator during a rest time of intermittent communication.

Seki et al. in the same field of endeavor discloses an electric power supply controller (fig. 3, Power Supply Controller 108, recited in col. 4, lines 7-11) for stopping electric power supply to the inter-node communicator during a rest time of intermittent communication ("sending of a halt signal to computer when a voltage fall is detected", recited in col. 4, lines 32-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the information was made to modify the features of Goldhor et al. with Asar et al., Sen et al. by using features as taught by Seki et al (US 5,678,229) in order to preserve the life span of the battery.

10.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hejna et al (US 2003/0041158 A1), and Hagai et al (US 7,051,110 B2).

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Candal Elpenord whose telephone number is (571) 270-

3123. The examiner can normally be reached on Monday through Friday 7:30AM to

5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CE

KWANG BIN YAO
SUPERVISORY PATENT EXAMINER